

July 16, 2007

Via E-mail and UPS Overnight

California Energy Commission
Docket Office
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512

DOCKET 06-IEP-IN
DATE JUL 16 2007
RECD. JUL 16 2007

Re: **Docket 06-IEP-1N – Draft Consultant Report, entitled
“Nuclear Power in California: 2007 Status Report”:
Comments of Southern California Edison Company**

Dear Docket Office:

Attached to this letter are the Comments of Southern California Edison Company (SCE) on the Draft Consultant Report entitled “Nuclear Power in California: 2007 Status Report,” dated June 2007.

Given the reality and urgency of the global climate issue, SCE believes that nuclear power should be available to be part of the solution to this problem. SCE recommends that California Energy Commission (CEC) conclude that actions should be taken in the near term to ensure that nuclear power can be a timely option. Near term actions should include identifying viable sites and seeking a Nuclear Regulatory Commission (NRC) Early Site Permit (ESP) for one or more such sites. The ESP is a first step in the new NRC licensing process. Taking this step would reduce uncertainties, provide some assurances of project feasibility, and meaningfully accelerate the availability of a new plant once it is decided one should be developed.

The current moratorium does not preclude obtaining an ESP, as a means of being able to deploy new plants in a more timely manner if determined to be appropriate. Nuclear generation of electricity provides substantial environmental, fuel diversity, and reliability benefits. California especially needs to be prepared to expand the supply of nuclear power as a means of meeting greenhouse gas (GHG) reduction goals in a proven and achievable manner.

The information provided in the Draft MRW Report and the information provided at the workshops is compatible with taking these near term actions, particularly given the expressed urgency of GHG concerns and the fact that used nuclear fuel can be stored safely, securely, economically, and environmentally acceptably for many decades, while the best options for ultimate disposal or re-use are determined.

If you have any questions about this letter or the attached comments, please contact Manuel Alvarez, in SCE's Sacramento office at (916) 441-2369.

Very truly yours,

A handwritten signature in black ink, appearing to read "Richard M. Rosenblum". The signature is fluid and cursive, with a long horizontal stroke at the end.

Richard M. Rosenblum

1382013.2

Attachment

**Comments of Southern California Edison Company (SCE) on the Draft
Consultant Report entitled “Nuclear Power in California: 2007 Status Report,”
dated June 2007**

**I. The Draft MRW Report Should Recognize the Benefits Provided By Nuclear
Power Which Outweigh the Environmental Impacts Compared to Other
Technologies, Making It a Viable And Important Option For California**

The first sentence of the Abstract to the Draft Consultant Report, entitled “Nuclear Power in California: 2007 Status Report” prepared by MRW & Associates, Inc., dated June 2007 (Draft MRW Report) states: “This consultant’s report examines how nuclear power issues have evolved since publication of the consultant report, *Nuclear Power in California Status Report*, which was prepared for the 2005 [Integrated Energy Policy Report (IEPR)].” While the Draft MRW Report focuses specifically on nuclear power issues, it fails to consider the relative impact of nuclear generation compared to other generation technology options. The MRW Report should assess nuclear generation benefits and impacts relative to other generation technology options.

California must make choices among available generation resources on a basis that will provide the greatest benefits while minimizing overall environmental impact. SCE expects that the benefits of nuclear power will outweigh the impacts associated with nuclear power described in the Draft MRW Report when compared with other generation options, particularly in terms of minimizing greenhouse gas (GHG) emissions. On this basis, the IEPR should include nuclear power as a viable and important option for electricity generation in California.

II. The Draft MRW Report Should Recognize That the Benefits of Nuclear Power Can Be Prolonged Through License Renewal

The Draft MRW Report, at page 2, states that “They (*i.e.*, existing nuclear plants) provide significant benefits to California in the form of resource diversity, low operating costs, relatively low greenhouse gas emissions, and enhanced grid reliability.” The Draft MRW Report then goes on to inappropriately conclude that the license renewal has “. . . uncertain economic, environmental, and reliability implications.” This conclusion is simply not justified in the face of the benefits of nuclear power already acknowledged in the Draft MRW Report. California’s nuclear power plants have proven benefits – nuclear power is a safe, reliable source of energy.

Nuclear power today provides approximately 17 % of the generation utilized by SCE’s customers. The operating costs of nuclear generation, particularly in comparison to natural gas resources at current gas prices, are low. Nuclear power generating facilities emit negligible amounts of GHG. Finally, because of its location on the transmission grid, SONGS 2 & 3 operation enhances transmission reliability in southern California.

The 2007 IEPR should focus on the growing need for electricity and practical ways to meet that need, particularly in light of the State’s commitment to reduce GHG. Energy conservation and the use of renewable sources of generation cannot fully meet California’s electricity needs. Renewable sources such as wind and solar energy require dedication of significant land resources and development of additional infrastructure. License renewal will prolong the benefits from the existing nuclear power plants and defer the need to build replacement generation resources.

A. The Legislature Does Not Need To Create “A Suitable Framework For Reviewing the Costs and Benefits of NRC License Renewal” Because Such a Framework Already Exists

The Draft MRW Report states, at page 1, that “the California Legislature should develop a suitable framework for reviewing the costs and benefits of nuclear plant license extensions and clearly delineate agency responsibilities, scope of evaluation, and the criteria for assessment.” The Nuclear Regulatory Commission (NRC) has established the process and requirements for license renewal in 10 CFR part 54. The California Public Utilities Commission (CPUC) has authority over the cost recovery of all actions undertaken by investor-owned utilities, like the owners of California’s nuclear power plants. The draft report does not provide any basis/rationale as to why agency responsibilities would require revision.

The CPUC has already suggested what issues it will consider in connection with the potential license renewal of Diablo Canyon Nuclear Generating Station Unit Nos. 1 and 2 (Diablo Canyon). In the Test Year 2007 General Rate Case (GRC) of Pacific Gas and Electric Company (PG&E), the CPUC ordered PG&E to submit, no later than June 30, 2011, an application on whether to pursue license renewal for Diablo Canyon. The Commission ordered that application to include PG&E’s license renewal study and to address “(1) whether renewal of the licenses is cost effective and in the best interests of PG&E’s rate payers, (2) the CEC’s AB 1632 assessment, and (3) any legislative framework that may be established for reviewing the costs and benefits of license renewal.”¹ SCE expects to submit an application to the CPUC addressing: (1) whether SONGS 2 & 3 should pursue license renewal, (2) the cost-effectiveness of such renewal

¹ D.07-03-044, page 103

licenses for SCE's ratepayers, and (3) a copy of its supplemental environmental assessment that it would provide with the NRC license renewal application.

B. Used Nuclear Fuel Can Be Stored Safely, Securely, Economically, and Environmentally Acceptably For Many Decades, While The Best Options For Disposal or Re-use Are Determined

The Draft MRW Report contains a lengthy discussion about options for disposal of used nuclear fuel.² SCE has constructed a dry cask storage facility for used nuclear fuel from SONGS 2 & 3 on the SONGS 2 & 3 site. Palo Verde Nuclear Generating Station Unit Nos. 1, 2 and 3 (Palo Verde) also uses dry cask storage. Dry Cask Storage is a safe and effective interim solution for storage of used nuclear fuel which can be utilized for many decades; providing more than sufficient time to make fully informed decisions on ultimate disposal or reprocessing. License renewal at both SONGS 2 & 3 and Palo Verde, would only add a modest volume to the existing inventory of used fuel facilities already required at these plants, enabling them to continue to make a major contribution to avoiding GHG emissions.

C. Low Level Radioactive Waste (LLRW) To Be Stored at SONGS Is a Manageable Problem Compared to the Large Release of GHG Into the Atmosphere That Its Operation Avoids

The Draft MRW Report expresses concerns about the disposal of greater than Class A LLRW generated by California nuclear power plants.³ LLRW generators include hospitals, universities, pharmaceutical companies, manufacturing plants, and

² Draft MRW Report, Chapters 3, 4, and 5.

³ Draft MRW Report, pages 6,14, 27, and 101-103

nuclear power plants. Under the Low Level Waste Policy Act, California is required to provide disposal capacity for all classes of LLRW or obtain access to another facility through legal binding agreement as the host state of the Southwestern Low Level Radioactive Waste Disposal Compact. As noted in the Draft MRW Report, California LLRW generators will no longer have access to the disposal site in Barnwell, South Carolina after June 30, 2008. Over 90% of the LLRW generated during operation of SONGS 2 & 3 is Class A LLRW. SCE will dispose of Class A LLRW, consistent with regulatory requirements, through its continued access to disposal facilities, such as the EnergySolutions site in Clive, Utah. The EnergySolutions site cannot accept greater than Class A LLRW (*i.e.*, Classes B and C LLRW). However, SCE has available space to safely collect and store the Classes B and C LLRW at SONGS until disposal capability is once again available. This is an easily manageable issue compared to the large release of GHG into the atmosphere that SONGS 2 & 3 operation avoids.

III. Nuclear Power Poses Minimal Risks to Public Health and Safety

Environmental impacts are part of the balanced decision making process intrinsic to useful application of any source of energy.⁴ The use of nuclear energy is not a “Faustian Bargain”, as the Draft MRW Report indicates on page 1, to any greater degree than a different energy source. All energy sources generate waste – fossil fuels’ environmental impacts include the emission of GHG and other air pollutants and the effects of mining or drilling to obtain the raw materials. Solar, wind, and hydropower all require significant dedication of land and water resources and have their own adverse environmental impacts on wildlife, natural resources, and other aspects of environmental

⁴ See Draft MRW Report page 9, pages 24-25, chapter 9, pages 160-168, page 229.

quality. Nuclear power generation poses minimal risks to the environment and public health and safety, as discussed further below.

A. Nuclear Energy Has Lesser Environmental Impact Than Other Generation Resources, Particularly Considering The Significant Benefit Of Emitting Virtually No GHG

The NRC licensing process assesses the impacts of nuclear power plants and manages them in a manner that fully protects public health and safety and the environment. Additionally, the California Coastal Commission (CCC) has studied SONGS for over 25 years with regards to marine and thermal impacts and the SONGS owners are performing all mitigation activities ordered by the CCC. The Regional Water Quality Control Board, San Diego region, and the CCC have found that the operations of SONGS result in a water temperature difference of less than 1 °F when compared to the temperature at reference stations.⁵ The Draft MRW Report, at page 29, Table 30 and on page 148, footnote 100, inaccurately describes this impact as “significant”.

The benefits of having a sizable generating source that does not utilize fossil fuel and emits little or no GHG are significant. The nuclear power plants reduce our state’s (and nation’s) reliance on fossil fuels and help achieve the State’s GHG emissions target.

⁵ “Final Report of the Marine Review Committee to the California Coastal Commission”, MRC Document 89-02, dated August 1989.

B. None Of The Recent Tritium Releases Has Presented A Threat To Public Health and Safety

The Draft MRW Report discusses recent inadvertent releases at several nuclear power plants.⁶ Notably, none of these instances has presented a threat to public health and safety. The identification of tritium in the groundwater beneath SONGS Unit 1 occurred as the unit is undergoing decommissioning. Voluntary communication about the discovery was made in August 2006 (not July). The groundwater was collected and discharged in accordance with NRC regulations and did not present a health hazard to either the public or the plant's employees at any time.

IV. SCE, Among Others, Will Assess the Possibility of Bringing the Benefits of New Nuclear Power Plants to Our Customers Within the Next Ten Years

The Draft MRW Report indicated, at page 224, that SCE is "not interested in developing new nuclear power plants in California or in participating in new nuclear power plants outside of California for at least the next ten years." This statement is incorrect. There is likely no practical way to achieve longer-term reduction in GHG without nuclear power being a larger part of the future generation mix. Currently, approximately 17% of SCE's customers electricity is produced by nuclear power. U.S. nuclear plants, including SONGS 2 & 3 and Palo Verde, are performing at very high performance levels, much higher on average than they were a decade ago. SCE, among others, will be assessing the possibility of bringing the benefits of additional nuclear power to our customers. Given the regulatory and construction timelines, new nuclear plants would be further out into the future than other available generation resources.

⁶ Draft MRW Report, pages 154-155.

SCE described its efforts to assess the possibility of bringing the benefits of additional nuclear power to its customers in its testimony on its testimony before the CPUC on its 2006 Procurement Plan (R.06-02-013, Exhibit SCE-1, Volume 2, pp. 40-41):

“In accordance with its Test Year 2006 GRC Decision, SCE’s Project Development Division (PPD) is undertaking activities to support the future of new generation in California. These support functions include: 1) identifying locations for new generation, 2) evaluating generation technologies, 3) tracking regulatory and legislative generation-related initiatives, and 4) the development of the best option for meeting future generation needs. The Decision found that these support functions are desirable and that it is reasonable that they be tracked in a memorandum account and recovered in future rates, provided that they are not associated with proposed projects.⁷

Among the activities of the PDD, an important area of focus is the evaluation of sites and technologies for new base-load generation which have significantly reduced or zero emission of GHG, consistent with state policies as set forth in legislation such as AB 32 and SB 1368. This evaluation includes the full range of siting considerations and technologies including Integrated Gasification Combined Cycle (IGCC) with GHG sequestration, nuclear and geothermal.”

SCE currently has very preliminary studies underway to gain a better understanding of the feasibility of nuclear plant development. Next steps could include seeking an Early Site Permit from the NRC. Such an activity would not be barred by Public Resources Code Section 22524.2.

V. Existing SCE Nuclear Power Plants Can Be Expected To Provide Reliable Service Through Their Licensed Life

The Draft MRW Report notes, at page 194 that “Overall reliability of U.S nuclear power plants has markedly improved since the 1980s and even the 1990s.” The Draft MRW Report then states, at page 195, “the capacity factors of the California units were 89 % (Diablo Canyon and SONGS) and 85 % (Palo Verde) as compared to the national

⁷ D.06-05-016, pp. 53, 376 (Conclusions of Law 8 and 9).

average capacity factor of 90 %. In 2006, the capacity factors of SONGS (72 %) and Palo Verde (81 %) were well below the 90 % national capacity factor for the year. . . The low capacity at SONGS can be attributed to refueling outages at both units.” It is incorrect to compare any one year of a given plant to a national average for many plants, since refueling outages and other special circumstances can cause any single plant in a given year to deviate from the average.

A. Recent Performance Problems at Palo Verde Caused Only a 14% Decline in 2006 From the Five-Year Average Capacity Factor

For the five years 2002-2006, Palo Verde had an average capacity factor of 85%. In 2006, performance problems caused a 14% decline in Palo Verde capacity factor to 71%. Nuclear power plants are complicated machines. Like any complex machinery, periodic maintenance and replacement of parts is necessary. This can impact performance in any given year. Because of the results of recent NRC inspections, Palo Verde is at this time subject to increased regulatory scrutiny by the NRC. This increased regulatory scrutiny should assist Palo Verde in resolving any remaining performance issues and ultimately result in significantly improved performance. In 2006, Palo Verde performance was lower than recent history. This is because work had been deferred and now needs to be accomplished in a relatively short period of time to meet NRC requirements for improved performance.

B. SONGS 2&3 2006 Performance Is Not Indication of Any Expected Decline in Future Performance, But Only of An Unusual Year With Two Extended Refueling Outages

SONGS 2 & 3 had a reduced capacity factor in 2006 because it had 176 unit days of scheduled outages. It is rare that SONGS 2 & 3 both experience scheduled outages in the same year. The low capacity factor was reasonable because: (1) there were two refueling outages, and (2) SCE needed to manipulate the timing of those outages to assure SONGS 2 & 3 would both operate during the summer months. The only unscheduled outages resulted from delayed return to service of SONGS 2 due to safety injection tank gasket and feedwater valve failures which added 30 days to the scheduled outage. The only unscheduled outage at SONGS 3 related to a four-day forced outage.

Like all generating facilities, SONGS 2 & 3 must take periodic scheduled outages for maintenance. Nuclear power plants differ from other generating facilities in that during the maintenance outages they must also refuel. If two refueling outages occur in one year for a two unit site, this can impact capacity factor as it did for SONGS 2 & 3 in 2006. That being said, in 2005, SONGS 2&3 experienced a 98.3% capacity factor because of the absence of refueling and maintenance outages.

C. Existing California Nuclear Plants Have Already Ordered Needed Components and Will Not be Impacted by Limited Manufacturing Capability

The Draft MRW Report states at page 9 that the implications of a “nuclear renaissance, could include both shortages of key reactor materials . . . that could also impact owners currently operating nuclear power plants that need to replace reactor

components.” SCE’s existing plants at SONGS 2 &3 and Palo Verde have already ordered necessary components such as, replacement steam generators, and reactor vessel heads. They will not be impacted by any limited manufacturing capability in terms of their future operation. This should be noted in the final MRW Report.

VI. Conclusion

SCE urges the California Energy Commission to take a balanced approach recognizing the benefits provided by nuclear power which outweigh the environmental impacts, making it a viable and important option for California in the future. Attached to these comments is an appendix containing a chart with additional minor proposed corrections to the Draft MRW Report.

Appendix
Proposed Technical Corrections To Draft MRW Report

<u>Page No.</u>	Should Read (changes underlined)
passim	The correct term for “spent fuel” is “ <u>used</u> fuel.” “Used” more accurately describes fuel that still has a significant amount of energy that could be recycled back into the generation process for reuse. Reprocessing is an environmentally responsible approach to reduce waste, but it does not obviate the need for a central repository and disposal facility.
37	The Draft MRW Report refers to the “EPA Air Quality Regulations” (page 37). Technically, the EPA is responsible for establishing radiation protection standards (not air quality regulations) to protect public health and the environment that will apply to the operation of a central repository.
109	In the first sentence under “Going Forward Capital Costs” on page 109, the components are being replaced due to aging rather than because they were “faulty.” The sentence should be reworded to “ <i>Diablo Canyon, SONGS, and Palo Verde are all facing significant capital improvement programs to replace <u>aging plant</u> components.</i> ”
109	The second sentence of the second paragraph under “Going Forward Capital Costs” on page 109 should read “ <i>At SONGS, the <u>plants</u>’ high pressure turbine rotors will be replaced. . .</i> ” to be clear that the turbine rotors are ordinary steam rotors associated with the secondary systems.
149	The second full sentence states “The California State Lands Commission (SLC) embraced the EPA’s regulations when it proposed to deny extensions or amendments to land leases for existing power plants that do not comply fully with federal and state water regulations.” In fact, the SLC April 17, 2006 Resolution regarding the use of once-through cooling water systems did not attempt to adopt the EPA regulations. Moreover, as recognized by the Report on page 150, the SLC regulations were deemed by the Office of Administrative Law to be an underground regulation that was not adopted pursuant to California’s Administrative Procedures Act and were therefore

invalid. According to the July 27, 2006 response to the Office of Administrative Law regarding the Petition to find the Resolution was an underground regulation, the SLC characterized the condition as merely expressing “the Commission’s concern that facilities seeking leases from state lands comply with the requirements adopted by other agencies. However, this clause does not itself adopt or impose any requirements to be included in future leases to be proposed by the Commission.” Thus, the SLC distanced itself from the actual requirements in the EPA regulations.

The Draft Report goes on to note that the State Water Resources Control Board (State Board) proposed a more stringent policy than that adopted by EPA. Actually, the State Board did not propose any policy. The State Board staff issued a scoping document on once through cooling water systems for a proposed policy. This staff proposed scoping document was designed to solicit comments on the type of a policy that should be adopted by the State Board. Many comments were submitted to the State Board pointing out significant flaws in the staff proposed policy scoping document. The State Board has not taken any action on the staff proposed policy scoping document. Thus, the report should not imply that the staff scoping document was endorsed in any way by the State Board.